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(54) Title: FLEXIBLE ELECTRONICS USING ION IMPLANTATION TO ADHERE POLYMER SUBSTRATE TO SINGLE CRYSTAL SILICON SUBSTRATE

(57) Abstract: An electronic apparatus uses a single crystalline silicon substrate disposed adjacent to a flexible substrate. The electronic apparatus may be a flexible flat panel display, or a flexible printed circuit board. The flexible substrate can be made from polymer, plastic, paper, flexible glass, and stainless steel. The flexible substrate is bonded to the single crystalline substrate using an ion implantation process. The ion implantation process involves the use of a noble gas such as hydrogen, helium, xenon, and krypton. A plurality of semiconductor devices are formed on the single crystalline silicon substrate. The semiconductor devices may be thin film transistors for the flat panel display, or active and passive components for the electronic device.

22

20

WO 2005/055281 A2



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